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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/677,392

10/01/2003

Martin H. Graham

3921P007

9543

8791

7590

09/10/2004

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EXAMINER

KITOV, ZEEV

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/677,392

Applicant(s)

GRAHAM, MARTIN H.

Examiner

Zeev Kitov

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 - 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham (US 6,424,125) in view of Shilling et al. (US 3,763,395). Regarding Claims 1 and 7, Graham discloses most of the structural limitations of the claim including a capacitor (element 10 in Fig. 1) attenuating signals having a frequency higher than the fundamental frequency; a control device (element 14 in Fig. 1) having a gate and two terminals, the two terminals being coupled to the capacitor; and a resistor (elements 11 in Fig. 1) coupled between the gate and one of the terminals of the control device causing the control device to conduct in the presence of unusually high voltage. However, it does not disclose a variable resistor. Shilling et al. discloses the variable resistor (elements 576, 577 in Fig. 5) coupled between the gate and one of the terminals of the control device causing the control device to conduct in the presence of unusually high voltage. Both references have the same problem solving area, namely overvoltage protection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Graham solution by

adding the variable resistors according to Shilling et al., because as well known in the art, such resistors are used to adjust the firing voltage threshold of the TRIAC.

Regarding Claims 4 and 8, Graham discloses the control device as TRIAC (element 14 in Fig. 1).

Regarding Claim 5, Shilling et al. disclose the two terminals of the control device as an anode terminal and cathode terminal (see Fig. 5), and the variable resistor (elements 576, 577) being coupled between the control electrode (node G in Fig. 5) and the anode (node T2 in Fig. 5). A motivation for modification of the primary reference is the same as above.

Regarding Claims 6 and 10, Graham discloses a resistor (element 16 in Fig. 1) coupled in series with the control device (element 14 in Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the Shilling solution by adding the resistor in series with the control device according to Graham, because as Graham states (col. 2, lines 53 – 56), it is necessary for dissipation the capacitor charge when it is discharging.

Claims 2, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of Shilling et al. and Mura (US 4,216,756). As was stated above, Graham and Shilling et al. disclose all the elements of Claims 1, 7 and 8. However, regarding Claims 2, 9 and 12, they do not disclose the varistor. Mura discloses the varistor (element 50b in Fig. 2) coupled between the anode and the gate terminals of the TRIAC (element 42b in Fig. 2, col. 6, lines 10 – 22). Both references have the same

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problem solving area, namely protecting electronic equipment against over-voltages. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the Shilling et al. solution by adding the varistor according to Mura, because as Mura states (col. 3, lines 35 – 39), the varistor helps to protect the circuit against excessive power dissipation. And as well known in the art, the varistor is widely used to protect circuits against over-voltages, while protection of the TRIAC gate is especially important, due to its high vulnerability to the excessive voltages.

Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham in view of in view of Shilling et al. and Court Decision *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). As was stated above, Graham and Shilling et al. disclose all the elements of Claims 1 and 7. However, regarding Claims 3 and 11, they do not disclose the varistor with cross-bar characteristics. As to particular characteristics of the Claims 3 and 10 varistor ("cross-bar varistor"), the Specification does not disclose them only saying that: "once triggered the varistor places essentially, a short across the power source" (page 2, paragraph 007). As well known in the art, to fire the TRIAC, the current is to be delivered to the TRIAC's gate, i.e. relatively low resistance is to be placed between the supply voltage source and the TRIAC gate. Therefore, a value of the resistance of the active varistor can affect the result (firing of TRIAC) and represents a result effective variable. Court Decision addresses finding a value of the result effective variable by stating that discovering an optimum value of a result effective


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variable involves only routine skill in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Shilling et al. solution by selecting the varistor with certain active characteristics ("cross-bar varistor"), because as it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeev Kitov whose current telephone number is (571) 272 - 2052. The examiner can normally be reached on 8:00 – 4:30. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272 – 2800, Ext. 36. The fax phone number for organization where this application or proceedings is assigned is (703) 872-9306 for all communications.

Z.K.
08/27/2004


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